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November 13, 2007
Date of Signature

Re:		
	Application of:	Slater et al.
	Serial No.:	09/748,720
	Filed:	December 26, 2000
	For:	Excessive Surge Protection Method and Apparatus
	Group Art Unit:	2836
	Examiner:	Danny Nguyen
	Our Docket:	1505-0094

BRIEF ON APPEAL

Sir:

This is an appeal under 37 CFR § 1.191 to the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office from the final rejection of claims 2-5, 25-32, 34, 35 and 37-38 of the above-identified patent application. These claims were indicated as finally rejected in an Office Action dated April 12, 2007. The remaining claims 24, 33 and 36 were objected to as being dependent upon a rejected base claim. A check in the amount of $630.00 is provided herewith to cover the fee required

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under 37 CFR § 1.17(f). Also, please provide any extension of time which may be necessary and charge any fees which may be due to Deposit Account No. 13-0014, but not to include any payment of issue fees.

(1) REAL PARTY IN INTEREST

Landis+Gyr Inc. is the owner of this patent application, and therefore the real party in interest.

(2) RELATED APPEALS AND INTERFERENCES

There are no appeals or interferences related to this patent application.

(3) STATUS OF CLAIMS

Claims 1-5 and 24-38 are pending in the application. Claims 6-23 have been withdrawn from consideration.

Claims 1-5, 25-32, 34, 35 and 37-38 stand rejected. Claims 2-5, 25-32, 34, 35 and 37-38 form the subject matter of this appeal. Claims 33 and 36 have been objected to as being dependent upon a rejected base claim. The status of claim 24 is unclear from the Office Action dated April 12, 2007. Page 6 of said office action states that claim 24 is allowable if rewritten in independent format. The Office Action Summary of the Office Action dated April 12, 2007 is consistent with this status. However, page 4 of the Office Action dated April 12, 2007 states that claim 24 is rejected as allegedly being obvious. Claims 1-5, 24-32, 34, 35 and 37-38 are shown in the Appendix attached to this Appeal Brief.

(4) STATUS OF AMENDMENTS

Applicants filed a Response to Office Action dated May 6, 2003 ("First Response") responsive to an Office Action dated November 6, 2002. A final Office Action dated July 23, 2003 was designated by the Examiner to be responsive to the First

Response. Applicants filed an Appeal Brief on December 22, 2003. In response to the Appeal Brief, the Examiner re-opened prosecution and issued an Office Action dated March 26, 2004.

Applicants filed a Supplemental Appeal Brief on July 26, 2004. In response to the Supplemental Appeal Brief, the Examiner again re-opened prosecution and issued an Office Action dated October 19, 2004.

Applicants filed a Second Supplemental Appeal Brief on January 19, 2005. After over ten (10) months, the Applicants received a Notice of Non-Compliant Appeal Brief dated November 23, 2005. Applicants re-filed the Second Supplemental Appeal Brief on December 23, 2005. In response to the second filing of Second Supplemental Appeal Brief, the Examiner again re-opened prosecution and issued an Office Action dated March 9, 2006. Applicants filed a Response to Office Action July 10, 2006, and re-filed the Response to Office Action November 10, 2006 pursuant to a Notice of Non-Compliant Amendment. Over five months later, the Examiner issued a final office action on April 12, 2007 ("Second Final Office Action").

(5) SUMMARY OF THE CLAIMED SUBJECT MATTER

Although claim 1 is not under appeal, it is an "independent claim involved in the appeal" because several appealed claims depend from claim 1. As a result, claim 1 is summarized here below.

Claim 1 is directed to a surge protection apparatus connected between an AC electrical utility power line and a load. While the invention is set forth generally in the claim 1, exemplary embodiments are discussed in the application in connection with Fig. 3. The example of Fig. 3 is not intended to limit interpretation of the scope of the claim, but it merely provided to satisfy the requirements of 41.37(c)(v).

The surge protection apparatus of claim 1 includes a voltage input directly coupled to the AC electrical utility power line, the AC electrical utility power line having a nominal AC voltage of at least about 120 volts. With reference to Fig. 3 of the application the surge protection apparatus 11 includes a voltage input 7 connected to the voltage source 2, which is a utility power line. (Specification at

p.7, lines 9-22).

The claimed apparatus also includes an inductor coupled between the voltage input and the load. With reference to Fig. 3 of the application, an inductor 8 is series connected between the voltage input 7 and the load 6, via a resistor 14, and a PPTC 3. The resistor and PPTC are not claimed in claim 1. (*Id.*)

The claimed apparatus also includes a protective barrier interposed between the inductor and the load, the protective barrier configured to physically isolate the inductor from the load. With reference to Fig. 3, the surge protection device 11 includes a protective barrier 10 that separates or isolates the inductor 8 (and other things) from the load 6. The protective barrier 10 may take infinitely various forms, but basically includes a wall, sleeve or compartment constructed of inflammable material, such as, for example, certain plastics. (Application at p.9, lines 11-15)

Claim 2 is directed to a surge protection apparatus connected between an AC electrical utility power line and a load. The apparatus includes a voltage input directly coupled to the AC electrical utility power line, the AC electrical utility power line having a nominal AC voltage of at least about 120 volts. With reference to the non-limiting example of Fig. 3 of the application, the surge protection apparatus 11 includes a voltage input 7 connected directly to the voltage source 2, which is a utility power line. (Specification at p.7, lines 9-22).

The apparatus of claim 2 also includes an polymeric positive temperature coefficient device (PPTC) coupled between the voltage input and the load. With reference to Fig. 3 of the application, a PPTC 3 is series connected between the voltage input 7 and the load 6, via a resistor 14, and an inductor 8. The resistor and inductor are not claimed in claim 2. (*Id.*)

The invention of claim 2 includes a protective barrier interposed between the PPTC and the load, the protective barrier configured to physically isolate the PPTC from the load. With reference to Fig. 3, the surge protection device 11 includes a protective barrier 10 that separates or isolates the PPTC 3 (and other things) from the load 6. The protective barrier 10 may take infinitely various forms, but basically includes a wall, sleeve or compartment constructed of inflammable material, such as, for example, certain

plastics. (Application at p.9, lines 11-15).

Claim 4 is directed to a surge protection apparatus connected between an electrical power line and a load. The apparatus includes a voltage input coupled to the electrical power line. With reference to Fig. 3 of the application the surge protection apparatus 11 includes a voltage input 7 connected to the voltage source 2, which is a utility power line. (Specification at p.7, lines 9-22).

The apparatus of claim 4 also includes an inductor, a separate resistor, and a polymeric positive coefficient temperature device (PPTC) coupled in series between the voltage input and the load. With reference to Fig. 3 of the application, an inductor 8, a resistor 14 and a PPTC are connected in series connected between the voltage input 7 and the load 6. (*Id.*)

Claim 34 is directed to a surge protection apparatus connected between an electrical power line source and a load. The apparatus includes a voltage input coupled to the electrical power line. With reference to Fig. 3 of the application the surge protection apparatus 11 includes a voltage input 7 connected to the voltage source 2, which is a utility power line. (Specification at p.7, lines 9-22).

The apparatus of claim 34 further includes an inductor and a polymeric positive coefficient temperature device (PPTC) coupled in series between the voltage input and the load, the inductor interposed between the PPTC and the voltage input. With reference to Fig. 3 of the application, an inductor 8, a resistor 14 and a PPTC 3 are connected in series connected between the voltage input 7 and the load 6. (*Id.*) The inductor 8 is interposed between the PPTC 3 and the voltage input. (See Fig. 3).

Claim 37 is directed to a surge protection apparatus connected between an electrical power line and a load. The apparatus includes a voltage input coupled to the electrical power line. With reference to Fig. 3 of the application the surge protection apparatus 11 includes a voltage input 7 connected to the voltage source 2, which is a utility power line. (Specification at p.7, lines 9-22).

The apparatus of claim 37 includes an inductor, a resistor having a resistance of at

least about 10 ohms, and a polymeric positive coefficient temperature device (PPTC) coupled in series between the voltage input and the load. With reference to Fig. 3 of the application, an inductor 8, a resistor 14 and a PPTC are connected in series connected between the voltage input 7 and the load 6. (*Id.*) The resistor 14 has at least 10 ohms. (Specification at p.8, lines 15-21).

(6) GROUNDS OF REJECTION TO BE REVIEWED

Whether claims 2-5, 25-29, 34, 35, 37 and 38 are unpatentable under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 4,845,580 to Kitchens (hereinafter "Kitchens") in view of U.S. Patent No. 6,094,129 to Baiatu (hereinafter "Baiatu").

Whether claim 24 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Kitchens in view of U.S. Patent No. 5,603,306 to Tai (hereinafter "Tai").

Whether claim 31 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Kitchens in view of Baiatu in further view of U.S. Patent No. 6,147,850 to Gronowicz, Jr. et al. (hereinafter "Gronowicz").

Whether claim 32 is anticipated under 35 U.S.C. § 102(b) by Kitchens.

The claims do not stand or fall together.

(7) ARGUMENT

A. <u>The Anticipation Rejection of Claim 32</u>

The Examiner has rejected claim 32 as allegedly being anticipated by Kitchens. (April 12, 2007 Final Office Action at p.5). However, the Examiner has admitted that Kitchens fails to disclose a "protective sleeve" as claimed. (*Id.* at p.6). Moreover, the Examiner does not argue that Kitchens inherently discloses a protective sleeve. Instead, the Examiner alleges that it would have been obvious to modify the surge protection of Kitchens to incorporate the protective sleeve as disclosed. (*Id.*)

It is respectfully submitted that the Examiner has not set forth a prima facie case of anticipation with respect to claim 32. Indeed, the Examiner has admitted that Kitchens

fails to teach each and every element of claim 32, and has not alleged that the missing claim elements would inherently exist in Kitchens. For at least these reasons, the anticipation rejection of claim 32 is in error and should be reversed.

Moreover, claim 32 is not obvious over Kitchens in view of Tai. For reasons that will be discussed below in further detail in connection with other claim rejections, there is no legally sufficient reason to modify Kitchens to include a protective sleeve as claimed.

B. The Obviousness Rejection of Claim 24

As discussed above, the status of claim 24 is unclear. Claim 24 either contains allowable subject matter or is rejected as allegedly being obvious over Kitchens in view of Tai. (Final Office Action at pp.4&6). Claim 24 depends from claims 5 and 4 and further recites a *protective sleeve*.

In particular, claim 5 recites:

> a protective barrier interposed between the load and the inductor, the resistor and the PPTC, the protective barrier configured to physically isolate the inductor, the resistor and the PPTC from the load

and claim 24, which depends from 5, recites:

> wherein the protective barrier includes a protective sleeve.

Thus, claim 24 recites a protective sleeve that physically isolates an inductor, a resistor and a PPTC from a load.

1. The Examiner's Rejection

In the Final Office Action, the Examiner has admitted that Kitchens fails to teach or disclose a protective sleeve. However, the Examiner alleged that it would have been obvious to "incorporate the protective sleeve as disclosed by Tai" into the surge protection circuit of Kitchens. As will be discussed below in detail, there is no motivation, suggestion or reason to modify the LC filter and protection circuit of

Kitchens by incorporating a protective sleeve.

2. The Reason for the Protective Sleeve in Tai is Inapplicable to Kitchens

Tai teaches the use of a protective sleeve in an interference elimination device used in a cable connection for spark plugs of an automobile. The interference elimination device 2 includes resistors R1, R2 and an inductor L in a protective sleeve 21. (Tai at cols. 2 and 3 and Fig. 2). The resistors and inductor help suppress high frequency components in the high voltage charging element of a spark plug circuit. The noise suppression device includes a grounding or shielding coupler 27 which surrounds the resistors and inductors. The protective sleeve 21 insulates the resistors and inductors from the grounding coupler 27.

Thus, the readily apparent purpose of the protective sleeve 21 in Tai is to separate an active circuit from a grounding coupler arranged in a "coaxial" manner. The grounding coupler acts as a RF shield that surrounds the active circuit coaxially. By contrast, Kitchens does not employ any coaxial grounding coupler around its devices. Kitchens does not disclose or suggest a grounding shield used for RF suppression that immediately surrounds the inductor. Accordingly, one of ordinary skill in the art would have no reason to place an insulating sleeve as taught by Tai around the inductor (or other elements) of Kitchens.

3. Other Issues With the Examiner's Rejection

In the rejection of claim 24, the Examiner stated that it "would have been obvious ... to have modified the surge protection circuit of Kitchens to incorporate the protective sleeve as disclosed by Tai in order to prevent circuit being damage caused by the high voltage". (Final Office Action at p.5). Thus, the Examiner has not identified how the protective sleeve of Tai would be used. To this end, it is noted that Tai uses a protective sleeve in a cabling environment which is not present in Kitchens.

Moreover, the Examiner has not identified where Tai teaches that the sleeve prevents circuits from being damaged. While Tai teaches that the insulated sleeve 21 helps prevent sparking or discharging of a very high voltage, nothing indicates that damage is possible, or prevented. A sparking or discharge of voltage in Tai would lead to

an operation failure whereby the spark plug of the vehicle would not discharge. There is no mention that actual circuit elements would be damaged.

Finally, and perhaps most importantly, the Examiner does not identify why a sleeve is necessary in the absence of an encapsulating grounding device 27.

Because there is no reason, motivation or suggestion to modify the circuit of Kitchens with the insulating sleeve of Tai, it is submitted that the obviousness rejection of claim 24 is in error and should be reversed.

C. The Obviousness Rejection of Claims 2-5, 25-29, 34, 35, 37, 38

The Examiner rejected claims 2-5, 25-29, 34, 35, 37 and 38 as allegedly being obvious over Kitchens in view of Baiatu. As will be discussed below, there is no motivation or suggestion to modify Kitchens as proposed to arrive at any of the inventions of claims 2-5, 25-29, 34, 35, 37 and 38.

1. Claim 2

Claim 2 is discussed above, and recites a PPTC device that is physically isolated from a load, among other things.

The Examiner has admitted that Kitchens fails to teach a PPTC device as claimed. The Examiner instead provided the following reason for modifying Kitchens to includes a PPTC as claimed.

> Baiatu discloses a current limiting deivce (figures 4,5) comprises a PPTC (15) is coupled in series with the inductor (30) to improve current limiting response (col. 6, lines 5-20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the surge protection circuit of Kitchens to incorporate the PPTC as disclosed by Baiatu in order to improve current limiting.

(Second Final Office Action at p.3). Thus, the Examiner asserts that Baiatu teaches that the use of a PPTC in series with an inductor improves "current limiting response".

2. The Examiner Takes the Teaching of Baiatu Out of Context

The Examiner cites col. 6, lines 5-20, as teaching that use of a PPTC improves current limiting. (*Id.*) However, Baiatu only teaches that *replacing a resistor with a PPTC* in series with an inductor *in a circuit that includes a parallel PPTC path and a*

series varistor improves current limiting response. In other words, the teachings cited by the Examiner at col. 6, lines 5-20 only teach improvements from one specific embodiment of Baiatu to another specific embodiment. Because Kitchens does not employ anything like either embodiment, these teachings of improved current limiting response at col. 6, lines 16-20 of Baiatu are inapplicable to Kitchens.

In particular, it is submitted that the portion of Baiatu cited by the Examiner is taken out of context. The cited portion (col. 6, lines 5-20) describes an improvement over the embodiment of Fig. 3 of Baiatu, which is a very specific current limiter circuit. The circuit of Fig. 3 includes a PPTC 5 in parallel with a series circuit of a varistor 7, a resistor 14, and an inductor 30. Lines 16-20 of col. 6 of Baiatu teach that if one were to replace the resistor 14 with another PPTC 15, there would be improved current limiting.

Kitchens does not include a current limiting circuit that is in any way similar to Fig. 3 of Baiatu. Kitchens discloses a surge protection circuit using a LC band pass filter, as well as MOV protection devices. (See Kitchens at col. 2, lines 18-19, 40-44). Thus, one cannot, in Kitchens, replace a resistor that is in series with an inductor with a PPTC that is in series with an inductor, as taught by Baiatu, because Kitchens does not have a series circuit of a resistor and an inductor. Moreover, unlike Baiatu, Kitchens does not employ a series varistor or parallel PPTC.

Simply put, Kitchens and Baiatu use completely different means for suppression of surges. Kitchens teaches a tuned LC filter for surge *voltage* suppression, and Baiatu teaches a *current limiting* circuit comprising a PPTC connected in parallel with a varistor, and inductor, and either a resistor or another PPTC. There is virtually no overlap in functionality between these two circuits. Accordingly, one of ordinary skill in the art would not have a reason to place a PPTC in series with the inductor of Kitchens.

Moreover, it is noted that the proposed combination apparently involves introducing a variable resistance (and other elements of Fig. 4 of Baiatu) into the tuned LC filter of Kitchens. Baiatu, however, does not teach use of a PPTC in a tuned LC filter environment. It is not clear, for example, whether the variable nature of the PPTC resistance could affect the envelope of the filter, and thus alter its performance.

Because the teachings of Baiatu are confined to a specific circuit, and because Kitchens is directed to a completely different circuit, there is no legally sufficient reason

to modify the LC surge suppression filter of Kitchens with a PPTC used to alter a specific, and different current limiting circuit.

As a consequence, the Examiner's combination of Kitchens and Baiatu is improper. Accordingly, the obviousness rejection of claim 2 is in error and should be reversed.

The rejections of claims 3-5, 25-29, 34, 35, 37 and 38 over Kitchens and Baiatu should be reversed for at least the same reasons.

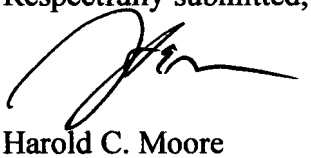
D. <u>The Obviousness Rejection of Claim 31</u>

Claim 31 depends from claim 2, and thus incorporates all of the limitations therefrom. The rejection of claim 31 relies on the reasoning for combining Kitchens and Baiatu as that set forth in connection with the rejection of claim 2. (Final Office Action at p.5). As discussed above, there is no legally sufficient reason, motivation or suggestion to modify Kitchens as proposed in connection with claim 2. Thus, for at least the same reasons as those set forth above in connection with claim 2, the obviousness rejection of claim 31 is in error and should be reversed.

(8) CONCLUSION

For all of the foregoing reasons, claims 2-5, 24-32, 34, 35, 37 and 38 are not unpatentable under either 35 U.S.C. 102(b) or 35 U.S.C. § 103(a). As a consequence, the Board of Appeals is respectfully requested to reverse the rejection of these claims.

Respectfully submitted,



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CLAIM APPENDIX

1. A surge protection apparatus connected between an AC electrical utility power line and a load, comprising:

a utility meter housing;

a voltage input directly coupled to the AC electrical utility power line, the AC electrical utility power line having a nominal AC voltage of at least about 120 volts;

an inductor provided within the utility meter housing, the inductor coupled between the voltage input and the load; and

a protective barrier provided within the utility meter housing and interposed between the inductor and the load, the protective barrier configured to physically isolate the inductor from the load.

2. A surge protection apparatus connected between an AC electrical utility power line and a load, comprising:

a utility meter housing;

a voltage input directly coupled to the AC electrical utility power line, the AC electrical utility power line having a nominal AC voltage of at least about 120 volts;

an polymeric positive temperature coefficient device (PPTC) coupled between the voltage input and the load; and

a protective barrier interposed between the PPTC and the load within the utility meter housing, the protective barrier configured to physically isolate the PPTC from the load.

3. An apparatus as claimed in claim 1, further comprising a polymeric positive temperature coefficient device (PPTC) connected in series with the inductor between the voltage source and the load, wherein the protective barrier is configured to physically isolate both the inductor and the PPTC from the load.

4. A surge protection apparatus connected between an electrical power line and a load, comprising:

a utility meter housing;

a voltage input directly coupled to the electrical power line;

an inductor, a separate resistor, and a polymeric positive coefficient temperature device (PPTC) positioned within the utility meter housing and coupled in series between the voltage input and the load.

5. The surge protection apparatus of claim 4, further comprising a protective barrier interposed between the load and the inductor, the resistor and the PPTC, the protective barrier configured to physically isolate the inductor, the resistor and the PPTC from the load.

24. The surge protection apparatus of claim 5 wherein the protective barrier includes a protective sleeve.

25. The surge protection apparatus of claim 4 wherein the separate resistor has a resistance of at least 10 ohms.

26. The surge protection apparatus of claim 25 wherein the separate resistor has a resistance of approximately 50 ohms.

27. The surge protection apparatus of claim 4 wherein the separate resistor includes axial leads.

28. The surge protection apparatus of claim 4 wherein the inductor is interposed between the voltage input and PPTC.

29. The surge protection apparatus of claim 4 wherein the voltage input is coupled to an AC electrical utility power line.

30. The surge protection apparatus of claim 1 wherein the protective barrier includes a protective

sleeve that receives the inductor.

31. The surge protection apparatus of claim 2 wherein the protective barrier includes a protective sleeve that receives the PPTC.

32. A surge protection apparatus connected between an electrical power line source and a load, comprising:

a voltage input coupled to the electrical power line;

an inductor coupled between the voltage input and the load; and

a protective barrier interposed between the inductor and the load, the protective barrier configured to physically isolate the inductor from the load, the protective barrier including a protective sleeve that receives the inductor.

33. The surge protection apparatus of claim 32 further comprising a PPTC coupled in series with the inductor between the voltage input and the load, the PPTC received by the protective sleeve.

34. A surge protection apparatus connected between an electrical utility power line source and a load, comprising:

a utility meter housing;

a voltage input directlycoupled to the electrical utility power line; and

an inductor and a polymeric positive coefficient temperature device (PPTC) positioned within the utility meter housing and coupled in series between the voltage input and the load, the inductor interposed between the PPTC and the voltage input.

35. The surge protection apparatus of claim 34 further comprising:

a protective barrier retained within the utility meter housing, the protective barrier configured to physically isolate both the inductor and the PPTC from the load.

36. The surge protection apparatus of claim 35 wherein the protective barrier includes a protective sleeve that receives the inductor and the PPTC.

37. A surge protection apparatus connected between an electrical utility power line and a load, comprising:

a utility meter housing;

a voltage input directly coupled to the electrical utility power line;

an inductor, a resistor having a resistance of at least about 10 ohms, and a polymeric positive coefficient temperature device (PPTC) positioned within the utility meter housing and coupled in series between the voltage input and the load.

38. The surge protection apparatus of claim 37 wherein the resistor includes axial leads.

EVIDENCE APPENDIX

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[NONE]

RELATED PROCEEDINGS APPENDIX

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